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EXAMINER	
MICALI, JOSEPH	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/567,263
Filing Date: September 06, 2006
Appellant(s): STREBELLE, MICHEL

Richard L. Treanor
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on April 5th, 2010 appealing from the Office action mailed on October 29th, 2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 10-23 are the only claims pending in the application and are currently rejected.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

German Patent No. DE 24 38 153 by Vollheim et al (02-1976)

US Patent No. 2,368,507 by Welty, Jr. (12-1940)

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 10-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patent No. DE 24 38 153 by Vollheim et al, in view of US Patent No. 2,368,507 by Welty, Jr.

With respect to claims 10-12 and 18, Vollheim teaches a process where acetylene, from dehydrochlorination of 1,2-dichloroethane (DECa), was selectively hydrogenated to C_2H_4 over a

fixed bed Pd-SiO_2 catalyst of low porosity with a gas mixture over 99.5% HCl, where processed gases were suitable for recycling and the catalyst was very easily regenerated (**Abstract**).

Vollheim, however alluding to and requiring catalyst regeneration, does not explicitly describe the process of thermal treatment in the presence of oxygen at a temperature between 300 and 700° C.

Welty, Jr. teaches a process for regenerating a catalyst, comprising any number of catalytic metals and inert supports (**column 1, lines 23-36**) by thermal treatment in the presence of oxygen (**claim 1**). Welty teaches a thermal treatment process ranging starting from 500 to under 1200° F, specifically a range of 1050-1100° F, or 566-593° C (**column 4, lines 64-68**).

Volheim teaches the above hydrogenation process including catalyst regeneration while Welty, Jr. discloses a process of regenerating catalysts similar to the ones used by Vollheim, wherein the regeneration is carried out by heating the catalyst in the presence of oxygen up to a temperature of 1050-1100° F, or 566-593° C. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Volheim such that the catalyst is regenerated by heating the catalyst in the presence of oxygen up to a temperature of 1050-1100° F, or 566-593° C, in view of the teachings of Welty, Jr. The use of this manner of regeneration in the process of Vollheim would be the obvious use of one of the limited number of catalyst regeneration methods known in the art and would merely provide the expected regeneration of the hydrogenation catalyst (**Welty, Jr, claim 1**).

With respect to claim 13, Vollheim discloses an inert support with BET surface area of less than 5 m^2/g (**pg 3, second paragraph, and translation, pg. 2, third paragraph**).

With respect to claim 14, as mentioned above, the modified method of Vollheim teaches a thermal treatment in between 1050-1100° F, or 566-593° C (**Welty, Jr., column 4, lines 64-68**).

With respect to claim 15, the modified method of Vollheim teaches a process for regenerating a catalyst, essentially by thermal treatment in the presence of oxygen (**Welty, Jr., claim 1**) or oxygen-containing gas, specifically in the presence of air (**Welty, Jr., column 4, lines 59-68**).

With respect to claim 16, the modified method of Vollheim teaches a process where the thermal treatment consists in a residence in a reactor vessel (**Welty, Jr., Figure 1, and column 4, lines 13-15**). This is a functional equivalent of a stove, which is defined an enclosed heated space. A reactor vessel would then, in fact, be a stove.

With respect to claim 17, Vollheim teaches a process where acetylene, from dehydrochlorination of 1,2-dichloroethane (DECa), was selectively hydrogenated to C_2H_4 over a fixed bed Pd-SiO_2 catalyst of low porosity with a gas mixture over 99.5% HCl, where processed gases were suitable for recycling and the catalyst was very easily regenerated (**Abstract**). The process of Vollheim is the same as recited (other than the specifics of the regeneration, which occurs after the process anyway), and thus, it would be expected to inherently include the same type of contamination as applicant's process.

With respect to claim 19, Vollheim discloses the catalytic metal (Pd) in the catalyst being 0.1-0.2% by weight of the catalyst (**pg 2, middle, and translation, pg 3, middle**).

With respect to claim 20, Vollheim discloses a support with a BET surface area of less than 5 m^2/g, a pore volume below 0.01 mL/g, and a particle size of above 0.3 mm (**pg 3, second**

paragraph, and translation, pg. 2, third paragraph). Such a catalytic metal layer would be present inherently by the disclosure of Vollheim's support and the amount of catalytic metal included. Furthermore, **MPEP 2144.05 [R-5] Obviousness of Ranges** states, "In the case where the claimed ranges 'overlap or lie inside ranges disclosed by the prior art' a prima facie case of obviousness exists."

With respect to claim 21, Vollheim discloses a support with a BET surface area of less than 5 m^2/g and a particle size of above 0.3 mm (**pg 3, second paragraph, and translation, pg. 2, third paragraph**). Furthermore, **MPEP 2144.05 [R-5] Obviousness of Ranges** states, "In the case where the claimed ranges 'overlap or lie inside ranges disclosed by the prior art' a prima facie case of obviousness exists."

With respect to claim 22, Vollheim discloses a catalyst of silica (gravel-form) with a preferably 4-5 mm diameter, preferably 0.12-0.18% Pd supported, and having a BET surface area of less than 5 m^2/g (**pg 3, second and fifth paragraph, and translation, pg. 2, third and seventh paragraph**).

With respect to claim 23, the modified method of Vollheim discloses such a limitation, as per the combination above with respect to claims 10-12 and 18 as well as the claim 22 teaching directly above (**Abstract**).

(10) Response to Argument

Applicant's detailed argumentation begins with addressing the Vollheim reference and its capability for catalyst regeneration. Applicant continues to attempt the assertion that the spent catalyst of Vollheim cannot be regenerated. Applicant brings in an article from 1987 which

includes Vollheim as an author; however, applicant does not make a point as to what the article discloses. In fact, applicant does nothing with the cited Chem.-Ing.-Tech article. Then, applicant once again cites portions of the examiner-used Vollheim patent and again agrees with the examiner that Vollheim discloses regeneration of his spent hydrogenation catalyst. Applicant turns to discussing the letter received from Degussa, which claims "no catalyst regeneration possible" with the Vollheim catalyst. This is flawed, as Vollheim clearly acknowledges regeneration is possible. Degussa "recommends" replacement with fresh catalyst. This does not mean regeneration is impossible, just that it may be more efficient to use fresh catalyst instead. Regardless, MPEP 2141.02 [R-5] Section VI states, "A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." All this discussion with Vollheim does not take the fact that the outstanding rejection is a 103 rejection with Vollheim and Welty, Jr. into consideration. Essentially, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant moves on to discuss the previously addressed and unconvincing declaration of Strebelle. Applicant makes a conclusory statement that just because this method of thermal treatment has been used to regenerate other types of spent catalysts doesn't mean it should affect the patentability of the instant invention. Examiner disagrees. Here's the examiner's sound logic. Primary reference Vollheim states the exact process for which the instant catalyst is used for, while also mentioning regeneration is possible but without explicitly stating a method. Thus,

Vollheim would need to be modified by a reference which discloses a known catalyst regeneration method. Secondary reference Welty, Jr, which describes catalysts of similar makeup (supported Group VIII metal catalysts) for use in similar processes (cracking and reforming), but most importantly, discloses the instant method for catalyst regeneration. Hence, the combination of Vollheim and Welty, Jr discloses the claimed method.

Applicant critiques Welty, Jr. essentially on the grounds of it being non-analogous art, and thus, in response to applicant's argument that Welty, Jr. is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both instances are set, as both the references and the instant invention are in the field of catalysts, with the reference explicitly pertinent to the particular problem with which the applicant was concerned, i.e. catalyst regeneration. Furthermore, applicant reiterates several times the point that Welty supposedly discloses a different catalyst from the instant invention. Firstly, such an argument is a piecemeal analysis not taking primary reference Vollheim into consideration, and secondly, Welty does disclose the instant catalyst, as Welty discloses a possible catalyst being a Group VIII metal (Ru, Rh, Pd, Os, Ir, Pt) on inert support (Welty, column 1, lines 23-34).

As such, applicant's argumentation on the references of Vollheim, Welty, and the combination of both are not persuasive.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Joseph V Micali/

Examiner, Art Unit 1793

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